

# Biology Toolkit: Indicator 1.2.6

Student Handout: Biology: Indicator 1.2.6

## Goal 1.0 Skills And Processes

Expectation 1.2 The student will pose scientific questions and suggest investigative approaches to provide answers to questions.

Indicator 1.2.6 The student will identify appropriate methods for conducting an investigation (independent and dependent variables, proper controls, repeat trials, appropriate sample size, etc.).

## Public Release - Selected Response Item - Released in 2009

Biology Indicator 1.2.6

Students tested two cleansers for their effectiveness against bacteria. In their experiment, each cleanser was used on two different household surfaces. The students took samples from each surface before and after using each cleanser. Then they transferred each sample to a culture medium. The students counted the number of bacterial colonies that grew on each culture medium. The results of their test are shown in the table below.

EFFECTIVENESS OF HOUSEHOLD CLEANSERS

Cleanser	Household Surface	Number of Colonies Before Scrubbing	Number of Colonies After Scrubbing
1	Counter 1	160	2
1	Sink 1	240	4
2	Counter 2	145	28
2	Sink 2	250	60

Which of these would be the best control for their experiment?

- A. Use only Cleanser 1 on both sinks and counters.
- B. Use Cleanser 1 on the sinks and Cleanser 2 on the counters.
- C. Test the number of bacteria on the counters and sinks after scrubbing without using cleansers.
- D. Test the number of bacteria on the counters and sinks without scrubbing with cleansers.

Correct Answer

C. Test the number of bacteria on the counters and sinks after scrubbing without using cleansers.

## Item

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